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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,237	01/23/2004	Takemori Takayama	KOM-0153/INO/DIV 3	5466
23353	7590	10/07/2005	EXAMINER	
RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			SAVAGE, JASON L	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/762,237

Applicant(s)

TAKAYAMA ET AL.

Examiner

Jason L. Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 102/103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 7-10 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by Takayama'549 et al (US 5,948,549).

Takayama'549 teaches a copper based sintered contact material which is sinter bonded to an iron-base material (col. 1, ln. 7-11). Takayama'549 further teaches the contact may be a CuSn alloy which contains multiple materials capable of forming intermetallics (col. 11, Table 4). Takayama'549 teaches the inclusion of many of the elements from Applicant's claimed first group of elements capable of forming an intermetallics including Ni, Si, Co, Al and P (Table 4 and Col. 8, ln. 1-7). Takayama'549 also teaches many of the elements from the claimed second group intermetallic forming elements including Cu, Sn, Mn, Cr, Mo and W (Table 4 and Col. 8, ln. 9-13).

Takayama'549 further exemplifies an embodiment wherein a contact contains elements capable of forming a first intermetallic of NiSi and a second intermetallic of SnMn wherein the total amount of intermetallic compound is 10% by weight (Table 4, Nos. 24-25). Although it is not certain that all of the elements would form into the recited intermetallics, the sample 24 containing 3 wt% of NiSi and 6 wt% of MnSn(atomic) could form an intermetallic having a maximum of 2.32 vol% NiSi and 5.07 vol% of MnSn respectively. Sample 25 containing 4 wt% of NiSi and 6 wt% of MnSn(atomic) could form an intermetallic of 3.35 vol% NiSi and 5.07 vol% of MnSn respectively. The total amount of intermetallics of the claimed materials would meet the

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limitation of being less than 10 vol% since the maximum amounts of the intermetallic materials would be 8.42 vol % or less. The Patent and Trademark Office can require Applicant to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on Applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 U.S.P.Q. 431 (CCPA 1977).

Regarding claim 8, Takayama'549 teaches that non-metallic particles may be contained in the contact including oxides in amounts as low as 0.2 and up to 1.9 wt % which would fall within Applicant's claimed range for the non-metallic particles (col. 5, Table 1, No. 20-26).

Regarding claim 9, Takayama'549 teaches that Mo, Co, Fe may be dispersed in an amount within the range claimed by Applicant (col. 7, Table 2, No. 8-10 and 14).

Regarding claim 10, Takayama'549 teaches that graphite may be contained in an amount less than 1 wt% (col. 5, Table 1, No 14-15).

Regarding claim 12, Takayama'549 teaches that the contact contain roughly 10% Sn and 5% Pb (col. 7, Table 2, No 1-14).

Claims 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama'549 et al (US 5,948,549)

Regarding claim 13, Takayama'549 teaches what is set forth above but teaches a Sn content of up to 10 wt% as opposed to the claimed range of 12-16 wt%. However, absent a teaching of the criticality of the Sn content being at least 12 wt% it would not provide a patentable distinction since it would have been within the purview of one of ordinary skill in the art to recognize that contents of some materials in amounts other than what is explicitly exemplified in the reference may be suitable for use in the contact with a reasonable expectation of success. Specific claimed alloy, whose compositions are in such close proportions to those in the prior art that, prima facie one skilled in the art would have expected them to have the same properties, must be considered to have been obvious from known alloys, *Titanium Metals Corporation of America V. Banner*, 227 USPQ 773.

Regarding the limitation that a Cu-Sn compound phase is dispersedly precipitated in the structure thereof, Takayama'549 specifically recites that a Cu-Sn compound alloy is added when forming the contact material and as such, one would reasonably expect precipitated Cu-Sn structures to be contained within the contact.

Regarding claims 14 and 19, Takayama'549 teaches that other elements such as Mn, Be and Ag may be added to the contact material (col. 16, ln. 17-60), although it is silent to the addition of lubricating particles such as those claimed. However, the use of solid lubricating particles in copper sintered contact materials is known and conventionally practiced in the art. It would have been obvious to one of ordinary skill in

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the art to have used known additives such as solid lubricants in the contact material order to improved the overall resistance to seizure of the sintered contact.

Regarding claim 15, Takayama'549 is silent to the sintered contact being a double-layered contact however, sintered double-layered contacts are structure that are well known in the art. Absent a teaching of the criticality of the contact being a double-layered contact, it would not provide a patentable distinction over the prior art since it would have been within the level of one of ordinary skill in the art to have formed the contact of Takayama'549 into any known contact structure, including a double-layered contact, with a reasonable expectation of success.

Regarding claim 16, Takayama'549 teaches that P is preferably contained in an amount of 0.1 to 1.0 wt% (col. 8, ln. 1-8). Takayama'549 further teaches that other elements such as Cr, Si, Al and Ti may be added as well (col. 10, ln. 1 – col. 10, ln. 25).

Regarding claim 17, the non-metallic particles disclosed by Takayama'549 would restrain shrinkage of the sintered layer just as much as the non-metallic particles claimed by Applicant.

Regarding claim 18, Takayama'549 teaches the addition of CuSn containing greater than 30 wt% Sn (col. 14, ln. 44-61). Takayama'549 also teaches the addition of Sn primary powder (col. 11, Table 4, No 18-25). It would have been obvious to have used both the High Sn containing copper and primary Sn powder since Takayama'549 teaches both are suitable for use.

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Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama'549 et al (US 5,948,549) as evidenced by Takayama'775 (US 6,015,775).

Takayama'549 teaches a copper based sintered contact material containing a variety of materials including graphite; however it is silent to the particle size of the graphite materials. Takayama'775 teaches a copper based sintered contact material (col. 4, In. 15-23) which may contain solid lubricant particles such as graphite (col. 3, In. 16-47). Takayama'775 further teaches that the particle size of the solid lubricant particles may be between 100 and 3000  $\mu\text{m}$  (col. 3, In. 17-29). Although Takayama'775 teaches that the solid lubricants are intended to protrude from the contact surface in order to provide a self-lubricating sintered sliding member whereas Takayama'549 is silent to the positioning of the particles, Takayama'775 is merely being provided as evidence that the use of solid lubricant particles having sizes within the range claimed is known in the art.

In response to the issue whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved, In re Wood, 202 USPQ 171, 174. In the instant case, both Takayama'549 and Takayama'775 are generally drawn to copper based sintered contact materials containing solid lubricant particles. Absent a teaching of the criticality of the particles being within the range claimed by Applicant, it does not provide a patentable distinction over the prior art since the use of solid particles having

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a size of less than 200  $\mu\text{m}$  is known and would have been an obvious design choice to one of ordinary skill in the art.

### ***Response to Arguments***

Applicant's arguments with respect to claims 7-19 have been considered but are not persuasive.

Applicant argues that the Examiner's assertion that the teachings of Takayama'549 of weight % is not equivalent to a teaching in the present invention of volume % and thus, the reference does not anticipate the claim limitations. While it is true that weight % and volume % are not the same, as demonstrated above, the samples cited in Takayama'549 would have volume percentages of intermetallics within the claimed range.

Applicant further argues that in the samples 24-25 which were specifically referenced by the Examiner, the SnAt compound would not be capable of forming an intermetallic of MnSn since the compound would not give up its tin (Sn) atom. However, it is the position of the Examiner that Applicant has misinterpreted the reference and that the symbol SnAt is not an alloy of tin and astatine but rather Takayama'549s representation of Sn atomized powder. As disclosed in column 8, lines 16-32, Sn atomized powder is the second element listed as materials that can be added to the copper-containing powder mixtures. The heading in Table 2 lists each of the compounds listed in column 8, lines 16-32, many in the exact order they were disclosed. As such, the symbol of SnAt in the tables of Takayama'549 are interpreted as being the



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Sn atomized powder disclosed in column 8. Therefore, Applicant's assertion that an intermetallic of MnSn could not be formed is not persuasive.


Applicant further states that no motivation for using the range of intermetallic metal in claim 7 has been established by Takayama'549. No motivation needs to be established when the claims are anticipated by the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jason Savage  
9-27-05

  
**JOHN J. ZIMMERMAN**  
**PRIMARY EXAMINER**